

Application No. 09/917,438

REMARKS

Claims 1-14 and 18-20 are pending. Claims 15-17 are canceled without prejudice. By this Amendment, claims 1 and 8 are amended, and new claims 18-20 are added. Specifically, claims 1 and 8 are amended for internal consistency in the terminology. New claims 18-20 are supported by the specification at, for example, page 13, line 25 to page 14, line 10, and by Fig. 6. No new matter has been introduced by the present Amendment. Claims 1-14 currently stand as rejected. Applicants respectfully request reconsideration of the rejections based on the following analysis.

Rejection Under 35 U.S.C. § 103

In the Final Office Action mailed on December 8, 2003, the Examiner maintained the rejection of claims 1-14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,648,175 (the Russell Patent) in view of U.S. Published Application 2002/0154878 (the Akwani Application). More specifically, the Examiner asserted, with respect to claims 1, 7, 8 and 14, that the '175 Patent "discloses a semiconductor substantially as claimed. Russell teaches a method of depositing a top clad layer." The Examiner also asserted that, "Russell fails to form an optical waveguide of a planar lightwave circuit. Akwani teaches forming an optical waveguide of a planar lightwave circuit." The asserted motivation for combining the references is that, "planar optical devices are typically employed designed for use with silica optical telecommunications." Applicants respectfully request reconsideration of the rejection in view of the following comments.

In order to establish a prima facie case of obviousness, three basic criteria must be met. "First, there must be some suggestion or motivation, either in the references themselves or in knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success.

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Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." See MPEP § 2142.

The Russell Patent is directed towards a method for depositing silicon oxide layer onto a semiconductor electrical circuit. More specifically, the Russell Patent is directed towards a method and apparatus for forming a dielectric layer that can be used as a separation layer in a semiconductor. See Russell Patent specification at, for example, column 1, lines 22-30; and column 2, lines 35-36. The Russell Patent attempts to address the problems of forming a dielectric layer having a high stability, low stress and good adhesion. See Russell Patent specification at, for example, at column 2, lines 8-35. However, the Russell Patent is not directed towards optical devices or the optical properties of silicon oxide layers. In particular, the Russell Patent does not disclose or suggest that the method for forming the Ge-BPSG layer is suitable for forming structures in optical devices. In addition, one of ordinary skill in the optical device art would not look to a patent directed towards semiconductor processing to solve issues in the formation of top clad layers for optical devices, since the issues in forming top clad layers optical devices are different than the issues faced when forming dielectric layers for semiconductor electrical circuits. The Russell Patent is non-analogous art with respect to planar optical structures. See MPEP 2141.01(a).

Also, the Akwani application does not teach that it is desirable to use dielectric materials from semiconductor circuits for optical structures. Thus, there is no motivation, either in the references themselves or in knowledge generally available to one of ordinary skill in the art, to combine the Russell Patent with the Akwani Application to achieve Applicants' claimed invention. As such, the Examiner has failed to establish a prima facie case of obviousness.

Since the combination of the Russell Patent and the Akwani Application does not render Applicants' invention, as claimed in independent claims 1 and 8, prima facie obvious, Applicants respectfully request the withdrawal of the rejection under 35 U.S.C. § 103(a) as being

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unpatentable over the Russell Patent in view of the Akwani Application. While Applicants do not acquiesce in the particular assertions, Applicants do not comment on the specific issues relating to the dependent claims since they are moot in view of the above noted deficiencies.

CONCLUSION

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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